The role of resilience in second year university students

Sarah M. Barbas

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Date 4/12/09
The Role of Resilience in Second Year University Students

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A report submitted in Partial Fulfilment of the Requirements for the Award of Bachelor of Arts (Psychology) Honours, Faculty of Computing Health and Science,

Edith Cowan University

Perth, Australia

Submitted (October, 2009)

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The Role of Resilience in Second Year University Students

Sarah M. Barbas

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Abstract

Around one third of all first year University students will not continue their studies in second year. Students who incur difficulties transitioning from one context to another have been found to withdraw due to an inability to cope with the challenges and adversity in their new environment. On the other hand, many students are able to effectively overcome significant difficulties they are faced with during the transition to or through university. This concept may be referred to as resilience. Few studies have investigated the role of resilience in the success of university students with no research currently focusing on second year university students. Furthermore, few studies have examined the resilience of university students in terms of individual dispositional attributes and how such attributes contribute to the retention of students. The present research examined the resilience of second year university students and several dispositional attributes expected to contribute to their resilience, including self-esteem, social support, Problem-Focused Coping (PFC) and Emotion-Focused Coping (EFC). Consistent with expectations, results from this study indicated that students with higher levels of self-esteem, social support and PFC predicted higher levels of resilience. Furthermore, students with lower levels of EFC were found to report higher levels of resilience. This study has contributed to the limited research that has been conducted concerning the resilience of second year university students, in Australia.

KEY WORDS: Resilience, university students, self-esteem, social support, coping, transition, retention.

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The Role of Resilience in Second Year University Students

Universities are becoming increasingly concerned with retention, integration and the successful transition of their students. This is not surprising when research evidence suggests that around one third of university students will not continue on to study in their second year, and that more students leave university before graduation than those that actually graduate (Grant-Vallone, Reid, Umali, & Pohler, 2004; Macnamara, 2007). No single factor has been identified to explain why university students do not pursue their studies, but rather a plethora of issues have been suggested (McMillan, 2005). Such factors may include demographics (e.g., gender, socio-economic status, ethnicity, age), education (e.g., academic ability, intelligence, parent’s education), institution (e.g., accessibility to resources, student assistance, orientation programs, learning advisors, involvement of faculty members) and individual factors (e.g., hardiness, social support, optimism, motivation, achievement, coping skills, self-esteem, self-mastery).

One factor, however, that many students tend to struggle with initially, is the transition to university life. Transition may be defined as moving from a known context to an unknown or partially unknown context (Latham & Green, 1997). Students who incur difficulties transitioning from one context to another, or from one academic year to the next, subsequently withdraw due to an inability to cope with the challenges and adversity in their new environment. On the other hand, many students are able to effectively overcome significant difficulties they are faced with during the transition to university, as well as the move from one academic year to the next, and adapt well to university life (Ungar, 2008). This concept may be referred to as resilience. Although much controversy surrounds the definition of resilience, it has been universally conceptualised as a dynamic process encompassing positive adaptation within the context of significant adversity (Garmezy, 1970; Masten, 2001; Richardson, 2002; Rutter, 1985; Ungar, 2008). The concept of resilience has
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received increased attention over the last few decades, beginning with research investigating
the resilience of disordered patients and evolving to understanding the role of childhood and
culturally specific resilience (Garmezy, 1970; Ungar, 2008).

Few studies, however, have investigated the role of resilience in the success of
university students with no research currently focusing on second year university students.
Furthermore, few studies have examined the resilience of university students in terms of
individual dispositional attributes and how such attributes contribute to the retention of
students. Therefore, considering the incidence of such high attrition rates of first year
university students, this study sought to investigate the influence of four psychological
constructs central to resilience, namely, self-esteem, social support, Problem-Focused Coping
(PFC) and Emotion-Focused Coping (EFC) in predicting resilience in a sample of second
year university students. This literature review will initially provide an overview of transition
and attrition which will be followed by a discussion of resilience, self-esteem, social support,
PFC and EFC. This section will conclude with an overview of the present study.

The Transition to University

Transition periods, such as the transition to university, are central to an individual’s
life (Latham & Green, 1997). Latham and Green (1997) stated that the only certainty one
may have in life is change, where continuous change and transition underlie all existence.
Transition refers to the movement from a known context to an unknown or partially unknown
context, whereby individuals may be faced with adversity, difficulties and challenges
(Latham & Green, 1997). Transition may comprise the length of time needed to make a
change, the time between the movement from the known to the unknown, and the settling in
and establishment in the new setting (Brostrom, 2005). For example, transition periods may
include the move from primary school to high school, high school to university, university to
the workplace, or relocating from one house to another or to another country (Latham & Green, 1997).

Transition periods occur frequently across the lifespan at different developmental stages, and much of the literature has focused on such developmental stages in terms of educational transition. Brostrom (2005), for example, studied children's transition from kindergarten to primary school (Grade one) and found that children may experience this transition as a culture shock with new challenges each day. Similarly, Sink, Edwards, and Weir (2007) expanded on this notion of the difference between one context and another, stating that not only is the move from kindergarten to primary school challenging, but transitioning from a relatively warm, caring, child-centred kindergarten environment to a less flexible first grade classroom is difficult for many children. Thus, a successful transition during this developmental stage is critical for the social and academic development of young children (Sink et al., 2007).

Furthermore, Newman, Newman, Griffen, O'Connor, and Spas (2007) examined the transition from primary school to high school by surveying a sample of 104 eighth graders and 101 ninth graders on their perceptions of peer and family support, school belonging, adjustment and depression. Results of their study indicated that the transition to high school was accompanied by a decline in a sense of school belonging and an increase in depressive symptoms. Results also indicated that changes in peer support and parent support were significantly associated with depressive symptoms in the transition to high school. Therefore, the authors concluded that the social and emotional needs of students needs to be assessed in order to provide an environment that promotes successful transition, and subsequently emotional, social and cognitive development. Cairney, Buchanan, Sproats, and Lowe (1998) contended that from an educational perspective, the transition process tends to temporarily compromise academic progress for all students. Those who do not recover from such a
process tend to be the least resourceful, or academically able. Therefore, a successful transition at each of the developmental stages in one’s life is crucial to cognitive and psychological well-being and the transition to university is no exception.

During the transition to university, students are confronted with many challenges (Munro & Pooley, 2009; Struthers, Perry, & Menec, 2000). Students must contend with, adapt to, and learn about, many differences to their educational settings, both environmentally and psychologically. Furthermore, entering university may require individuals to face multiple transitions such as changes in living arrangements, academic environments, and building new friendship and support networks (Pittman & Richmond, 2008). Therefore students are faced with adapting to greater independence and responsibility in both personal and academic settings (McInnis, James, & Hartley, 2000). For example, in their report on creating a positive first experience for university students, The University of Queensland (2004) stated that an effective transition may increase the chance of academic success for students and their overall satisfaction with their university studies. This research suggested that issues that appear to affect the nature of student involvement with the university include: a lack of challenging learning experiences; uncertainty or anxiety about independent learning; loneliness and isolation from others and from university life; combining work and study leading to limited involvement with the university; uncertainty about where to get help; confusion about program choice; and, failure to gain admission to their first preferred course selection. This study reported that the successful integration and adjustment of the student into university life was significant, through the development of a sense of belonging and an appropriate identity as a university student (The University of Queensland, 2004). In addition to the successful transition to university, the successful transition through university from one academic year to the next is just as crucial to a student’s academic success. The adjustment of students during their first year of university is
of particular importance as it has the potential to influence student satisfaction and the way they learn, and whether they develop the skills necessary for high-quality learning and persistence.

As students start their careers at universities, their adjustment to the environment is critical for their success and retention at the university (Grant-Vallone et al., 2004; Munro & Pooley, 2009). Latham and Green (1997) suggested that the problems that may arise are not so much the transition itself, but rather the ways in which the change occurs and how it is perceived. Social and academic adjustment may include the motivation to succeed, academic performance, a positive perception of a student’s own ability and how well he or she adapts to the university campus, and participates in social activities (Grant-Vallone et al., 2004). Students may perceive adjustments and challenges as positive or negative (Struthers et al., 2000). When students have negative experiences, their motivation to succeed, as well as their academic performance may become adversely affected (Struthers et al., 2000). After prolonged periods of time this may lead to helplessness, depression and stress, thus placing the academic careers of the students in jeopardy (Struthers et al., 2000). In comparison, other students have the capacity to successfully adjust and transition to tertiary education with minimal setbacks, and may view challenging events as surmountable (Struthers et al., 2000).

The successful transition and adjustment of students impacts on academic success, influencing the extent to which students become involved with the programs in which they are enrolled and ultimately influences whether they remain at university (The University of Queensland, 2004). Therefore, the first year of a student’s life at university poses particular challenges for both the student and the institution, and it is not surprising that student attrition rates are at their highest during the first year of study (Macnamara, 2007).
Student Attrition

In Australia, over 300,000 students enrol in university each year and one third will not continue to study in their second year (Macnamara, 2007). Some students may change to other courses, while others may defer their studies, or leave university altogether (McMillan, 2005). Over the past decade universities across Australia have experienced attrition rates ranging from 15% to 50%, with an average of 20% (Cao & Gabb, 2005). These attrition rates highlight the importance of investigating factors contributing to undergraduate persistence through to graduation.

Australian universities are paying increased attention to the retention of students as attrition results in considerable costs to the student, the community and the institution (Cao & Gabb, 2005). For example, in terms of costs to the institution, The International Centre for Student Retention (2005) in Virginia Beach, in the United States of America (USA) stated that if a student decides to leave during their first year of university, the institution can calculate the loss of that student by multiplying the lost tuition charges for subsequent years to the completion of their degree (The International Centre for Student Retention, 2005). Furthermore, it has been argued that institutions lose costs related to ancillary revenues such as student housing on campus, bookstore, restaurant and entertainment revenues (The International Centre for Student Retention, 2005).

In terms of the students who withdraw, those that transfer to another university due to financial issues or course change, not only risk incurring a fee or having to pay for the semester even though they are not attending the university, but also have to pay tuition fees to their new institution. Additionally, more tangible issues are associated with student attrition, such as costs related to time spent on activities that may not necessarily move students forward in terms of career development (The International Centre for Student Retention, 2005). Thus, if a partial education fails students, both socially and economically, then the
time spent in these activities can be calculated in lost investment in terms of tuition, fees, plus the opportunity costs of lost wages. Such costs are justifiable.

Student attrition also impacts on the community. For example, student attrition incurs costs related to post-secondary investments, loss to taxpayers, and the state and federal government, costs to social services, and the loss to society at large of the opportunity to excel or contribute at the higher echelon of business and trade (The International Centre for Student Retention, 2005). Global markets demand higher skills and education, and students who drop out of university leave a gap that is not necessarily filled by other domestic Australian students. Thus, student attrition has the potential to cost not only the individual and the institution, but also the society at large. As a result of the high rates of attrition currently being experienced by Australian universities as well as the costs incurred, much research has been conducted to investigate factors contributing to student attrition.

No single factor has been identified to explain why students leave educational settings and do not pursue their studies to completion. Rather, research has suggested many issues which may impact student attrition, such as academic and social adjustment, varied or unmet expectations, extra-curricular commitments, financial pressures, lack of student-institution fit, isolation, inadequate orientation and academic induction activities, poor attendance patterns, adverse teaching, learning and formative and summative assessment experiences (Nelson, Duncan, & Clarke, 2009). Additionally, many theories have been posited in an attempt to explain student attrition (Bean, 1980; Bean, 1982; Fishbein & Ajzen, 1975; Lenning, Beal, & Sauer, 1980; Pascarella, 1980; Rootman, 1972; Spady, 1970; Tinto, 1975).

More recently, however, Tinto (1993) has developed an interactionist theory of the student persistence/withdrawal process in postsecondary institutions. Tinto’s (1975, 1993, 2006) model, arguably the most robust and widely documented theory of student attrition, is both longitudinal and complex, and regards persistence largely as an outcome of the student’s
interactions with the social and academic systems of the institution (Cao & Gabb, 2005).

According to Tinto (1993), academic integration and social integration are critical to student persistence in the institution. Academic integration refers to the extent that students are integrated into the academic system of the university, and social integration refers to the extent of integration into the social system of the university (Cao & Gabb, 2005). Tinto (2006) suggested that five conditions emerge as supportive of student learning, retention and success including: (1) high expectations for students’ learning are held, (2) academic and social support are readily available, (3) frequent feedback about student learning is provided, (4) students have the opportunity to be actively involved with other students, and, (5) relevant faculties in learning, particularly in the classrooms, laboratories and studios of the campus are available. In summary, Tinto’s (1975, 1993) model of learning encourages the collaboration of students and faculty members in a way that promotes social and academic support networks among students (Darlaston-Jones, Cohen, Haunold, Young, & Drew, 2003).

The factors influencing student attrition have been well researched, with some findings consistent across institutions and countries, but with considerable differences in other findings (McInnis et al., 2000; McInnis, 2001). Literature on university student attrition within Australia, however, is scarce. One Australian study examining attributes of attrition was conducted by Cao and Gabb (2005). Their research explored the pattern of attrition of undergraduate level students, based loosely on Tinto’s (1975, 1993) model of post-secondary attrition. Their study included analyses of variables such as gender, age, language, socio-economic status, tertiary entrance score, field of study, attendance (full/part time), degree (double/single), academic progress, campus, region and employment status. Students selected included 4,405 students from the 2002 cohort, 4,414 students from the 2003 cohort and 3,684 students from the 2004 cohort. Results indicated that the three main variables predicting attrition were low academic progress, part-time enrolment and residence (e.g., Western
Notable, however, were factors such as socio-economic status, language, country of birth and tertiary entrance scores that were not identified as predictors of attrition, contrary to previous research (Cao & Gabb, 2005; McMillan, 2005). Finally, Cao and Gabb (2005) found that a lower level of academic achievement in the commencing year was the most powerful predictor of student attrition, reflecting a deficiency in academic integration as suggested by Tinto (1993).

This is one Australian study examining factors attributable to the attrition of undergraduate level university students. Consistent with much of the previous research, however, its focus was primarily based on demographic and achievement factors, and lacked any emphasis on individual personality and psychological factors (McInnis, 2001). While it may be possible that students who withdraw do so due to demographic and achievement factors, it has been suggested that student withdrawal is also likely to reflect a response of individual personality correlates to various situational factors in such a way that students can no longer attend university (Corfeild & Ogston, 1973). For example, research investigating the influence of personality and cognition on academic stability, conducted by Corfeild and Ogston (1973), secured psychometric scores and academic stability information from 1,038 freshman (undergraduate) students in the United States of America (USA). Corfeild and Ogston (1973) found that factors such as extraversion, low need for structure, social sensitivity, dependence on others and poor academic performance were possible indicators of academic withdrawal.

In summary, research on personality and psychological factors of student attrition such as the study by Corfeild and Ogston (1973) is limited, especially in Australia. Furthermore, a review of the literature identified a robust body of research concerning university student attrition, however, there is a considerable lack on the more positive aspects contributing to the retention of university students, and subsequently factors that lead to student
Resilience in Students

perseverance. Such research is important as there is a need to examine attributes of students who exhibit the capacity to successfully adjust and transition to, as well as through tertiary education, with minimal setbacks and accept challenges as an opportunity for growth and educational development (Struthers et al., 2000). Not all students will experience such challenges and subsequently withdraw when faced with the transition into university and the incidence of such high attrition rates across Australian universities only highlight the importance of investigating factors contributing to undergraduate retention and persistence through to graduation. Accordingly, resilience theory and research has the potential to enhance understanding in this area.

Resilience

Defining Resilience

Much controversy has surrounded the definition of resilience. Universally defining resilience has been challenging and many different conceptualisations have been developed and reported. For example, relevant literature argues whether resilience may be defined as phenomenological qualities of individuals, as a process, or as a motivational force within an individual (Richardson, 2002).

The first conceptualisation defines resilience as phenomenological qualities of individuals and support systems that predict social and personal success (Richardson, 2002). This definition focused on a shift from examining resilience in terms of the risk factors that led to psychosocial problems to the identification of strengths of an individual. For example, Rutter (1985) conducted a series of epidemiological studies on youth from inner-city London and the rural Island of Wright. He found that one quarter of these children were resilient even though they may have experienced many risk factors. Rutter (1985) identified resilient qualities in these children such as having an easy temperament, being female, a positive school climate, self-mastery, self-efficacy, planning skills, and a warm, close personal
relationship with an adult. Therefore, he concluded that the premise upon which resilient qualities is based is that individuals possess selective strengths or assets to help them survive adversity (Richardson, 2002). Research relative to this particular definition of resilience led to the identification of qualities that assist individuals in recovering from adversity and the resulting paradigm shift from the identification of risk factors to the nurturing of personal strengths (Richardson, 2002).

The second conceptualisation, resilience as a process, suggested that resilience may be defined as the process of coping with stressors, adversity, change, or opportunity in a manner that results in the identification, fortification, and enrichment of protective factors (Richardson, 2002). For example, Richardson, Neiger, Jensen, and Kumpfer (1990) proposed a detailed process of accessing resilient qualities as a function of conscious or unconscious choice. They presented resilience as a simple linear model that depicted an individual (or group) passing through the stages of biopsychospiritual homeostasis, interactions with life prompts, disruption, readiness for integration and the choice to reintegrate resiliently, back to homeostasis, or with loss. Resilient reintegration refers to the reintegrative or coping process resulting in growth, knowledge, self-understanding, and increased strength of resilient qualities (Richardson, 2002). Richardson et al.'s (1990) model depicts that individuals, through planned disruptions or reacting to life events, have the opportunity to choose consciously or unconsciously the outcomes of disruptions.

The final conceptualisation of resilience, views resilience as the postmodern multidisciplinary identification of motivational forces within individuals and groups and the creation of experiences that foster the human capacity of all individuals to transform and change, no matter the risks (Richardson, 2002). A succinct statement of this resilience theory is that there is a force within everyone that drives them to seek self-actualisation, altruism, wisdom, and harmony with a spiritual source of strength. This force is known as resilience.
Supportive of resilience as a force, Werner and Smith (1992) referred to resilience as an innate “self-righting mechanism”.

Although the three conceptualisations of resilience differ substantially, all refer to resilience as overcoming adversity. Therefore a universally held definition of resilience is that it is a dynamic process encompassing positive adaptation within the context of significant adversity (Luthar, Cicchetti, & Becker, 2000). More recently, however, after studying resilience across 1500 youth from 14 countries, Ungar (2008) proposed a more culturally and contextually relevant definition of resilience:

In the context of exposure to significant adversity, whether psychological, environmental, or both, resilience is both the capacity of individuals to navigate their way to health-sustaining resources, including opportunities to experience feelings of well-being, and a condition of the individuals family, community and culture to provide these health resources and experiences in culturally meaningful ways (p.225).

As outlined in the discussion above, defining resilience has been challenging, as one definition of resilience cannot apply to all circumstances. The ever evolving definition of resilience may be better understood in terms of the historical research.

A Brief History of Resilience Research

The concept of resilience has received increased attention over the last few decades (Garmezy, 1970; Masten, 2001; Richardson, 2002; Rutter, 1985; Ungar, 2008). The investigation of resilient individuals began with empirical literature focusing on severely disordered patients, in an attempt to understand maladaptive behaviour (Garmezy, 1970). From here, the focus shifted to studies involving children of schizophrenic mothers, resulting in the emergence of childhood resilience as a major theoretical and empirical topic (Luthar et al., 2000). Early efforts to define resilience focused on personal qualities of 'resilient
children’ such as autonomy and high self-esteem. However, as work in the area evolved, researchers began to acknowledge that resilience may often arise from external factors as well as internal factors (Luthat et al., 2000). Thus, research expanded to include multiple adverse conditions experienced by children such as socioeconomic disadvantage and associated risks, parental mental illness, maltreatment, urban poverty, chronic illness, and catastrophic life events (Luthar et al., 2000). Subsequent research led to the delineation of three sets of factors implicated in the development of resilience including: (1) attributes of the children themselves, (2) aspects of their families, and (3) characteristics of their wider social environments (Masten, 2001). More recently, research has shifted from identifying protective factors to understanding underlying protective processes. Instead of studying which child, family or environmental factors are involved in resilience, researchers are striving to understand how such factors may contribute to positive outcomes (Luthar et al., 2000). Therefore resilience research has become more global, expanding to studies involving not only children, but also resilient attributes of individuals faced with diversity, trauma, hardship and transition. One aspect of resilience that has remained consistent throughout the literature, however, is the identification of risk and protective factors contributing to the resilience of an individual.

**Risk and Protective Factors**

Researchers have referred to risk and protective factors when addressing the judgement of threat or adversity individuals face on their path to resilience (Masten, 2001). Risk factors are those factors that have the potential to increase the likelihood of an individual developing an emotional or behavioural problem at some point (Hawley & DeHaan, 1996). Individuals are not considered resilient if there has never been a threat to their development (Masten, 2001). In other words, researchers suggest that there must be current or past hazards judged to have the potential to derail normative development (Masten,
Broad diverse categories of risk factors have been identified such as socio-economic status, maltreatment or violence, developmental problems, massive community trauma, low birth weight, divorce, poverty, death of a family member, and mental illness (Hawley & DeHaan, 1996; Masten, 2001). On the other end of the continuum, protective factors interact with risk factors to reduce the potential for negative outcomes, and may be defined as attributes of individuals and environments that act as buffers between an individual and stressful situations (Hawley & DeHaan, 1996; Ungar, 2004a). According to the protective factor model of resilience, a protective factor interacts with a stressor to reduce the likelihood of negative outcomes (Steinhardt & Dolbier, 2008). As previously stated, research on resilience in children has led to the delineation of three sets of protective factors implicated in the development of resilience including: (1) psychological/dispositional attributes of the individual, (2) family support and cohesion, and (3) external support systems (Friborg, Hjemdal, Rosenvinge, & Martinussen, 2003).

Dispositional attributes of a person are those individual psychological assets that create an 'I can do it attitude' (Ungar, 2007). Such attributes may include easy temperament, hardiness, optimism, empathy, confidence, self-efficacy, sense of humour, locus of control, intelligence, pro-social behaviour, positive self-image, motivation, self-esteem and coping skills (Friborg et al., 2003; Hawley & DeHaan, 1996; Ungar, 2004a; Ungar, 2007). Competencies of resilience are viewed, in particular, as important means of coping with adversities (Leipold & Greve, 2009). In this sense, it is the individual’s resilience that ensures that he or she recovers from or entirely avoids negative outcomes from unfavourable conditions that otherwise would inevitably lead to negative developmental pathways (Leipold & Greve, 2009). Therefore, it has been argued that as resilience denotes an individual’s stability under significant adverse conditions, it can be explained in terms of coping processes leading to developmental trajectories (Leipold & Greve, 2009). In addition to dispositional
attributes of a person, familial factors have also been found to relate to resilience, serving as a potential protective factor.

Relative to family support and cohesion, Barnard (1994) suggested several familial factors that appear to be related to resilience, including a productive relationship between a child and their mother, a good fit between parent and child, maintenance of family rituals, the absence of divorce during adulthood, minimal conflict in the home during infancy and proactive confrontation of problems. Additionally, stability, warmth, nurturance, positive interactions, consistent discipline and cohesion have been found to be positively related to resilience in children (Hawley & DeHaan, 1996). Hawley and Dehaan (1996) suggested that an important protective factor is the presence of at least one adult who takes strong interest in the child. Bronfenbrenner (1990) suggested that this person does not necessarily need to be a family member, but someone who is emotionally involved with the child and committed to providing more complex challenges in life. In his qualitative study on the relationships between 43 high-risk adolescents and their caregivers, Ungar (2004b) found that new identities are created for adolescents through ongoing relationships with caregivers, more so than from interactions with their peers. Ungar (2004b) stated that youth argue that their ability to gain acceptance from caregivers for the identities constructed both behind and beyond their front doors is critical to overcoming adversity associated with growing up in resource-poor environments. Thus the more successful youth are at achieving acceptance for their identity as resilient across different social situations, the more they feel their mental health is enhanced (Ungar, 2004b).

Finally, well-defined, external support systems have also been found to be positively related to resilience in children (Hawley & DeHaan, 1996). Ungar (2007) suggested that just as family and disposition are important in the path to resilience, so too are communities and the resources they offer. This does not only entail an individual’s ability to discover these
resources, but also how well a community provides these resources in ways that are accessible to the individual (Ungar, 2007). Ungar, (2005) stated that systems such as welfare, mental health, corrections, education, public health, political and legislative, spiritual communities and informal peer networks are important services that communities provide in encouraging resilience in individuals. Additionally, Ungar (2008) noted that opportunities for age-appropriate work, avoidance of violence in the community, government assistance, meaningful rites of passage, tolerant communities, safety and security, perceived social equity and access to schools, education, information, and learning resources may offer individuals a better chance at overcoming adversity.

In evaluating the protective factors determining healthy adjustment to long-term stresses, Hjemdal, Friborg, Martinussen, and Rosenvinge (2001) proposed a rating scale for adult resilience. They contended that of the two scales that had appeared in the resilience literature, neither included measurements of social factors known to be essential to resilience (Friborg et al., 2003). The first measure of resilience (Wagnhild & Young, 1990) was developed by interviews with elderly American women who had successfully dealt with various losses typical of old age. A follow up study by Aroian, Schappler-Morris, Neary, Spitzer, and Tran (1997) failed to validate the scale. Another scale, developed by Jew, Green, and Kroger (1999), for children and adolescents was based on the cognitive appraisal theory of Mrazek and Mrazek (1987). This scale emphasised 12 essential skills important for coping adequately with life stress, however it did not generalise to the adult population. Therefore, Hjemdal et al. (2001) proposed a 45 item scale to measure adult resilience, which incorporated five dimensions including personal competence, social competence, social support, family coherence and personal structure, named the Resilience Scale for Adults (RSA). The 45 item scale was later reduced to 37 items after tests of validations proved these 37 items to best represent the five dimensions of resilience (Friborg et al., 2003).
In 2005, Friborg, Barlaug, Martinussen, Rosenvinge, and Hjemdal cross validated the RSA with measures of personality (Big Five Theory), cognitive abilities (Raven’s Advanced Matrices, Vocabulary, Number series), and social intelligence (TSIS). Confirmatory factor analyses were computed on the responses of 482 applicants of a military college. The fit of the RSA’s five factor model was confirmed for 33 of the 37 items, whereby all resilience factors were positively correlated to the Big Five Theory of personality. Friborg et al. (2005) concluded that their study supported the convergent and discriminative validity of the scale, and thus the inference that individuals scoring higher on this scale are psychologically healthier, better adjusted, and thus more resilient.

**Resilience in University Students**

Studying resilient individuals has been found to provide insight into whether unusually high levels of resources are necessary to achieve success in spite of adversity and whether adaptive functioning is achieved at a psychological cost, as some research has suggested (Hines, Merdinger, & Wyatt, 2005). Given the increasing amount of stress placed on university students, resilience theory and research has the potential to enhance understanding in this area. Furthermore, findings from research may contribute to informing policies and strategies to better assist the integration and adaptation of university students to their new settings, and subsequently assist universities towards more effective retention of students.

In terms of academic outcomes, research has established risk factors associated with academic withdrawal, such as being a minority student attending an inner-city school, or coming from a low income home or a home where English is not the primary language (Finn & Rock, 1997). However, it has been found that if a student has a positive self-view and routinely exhibits these behaviours in their positive form, these may serve as protective mechanisms that improve a student’s chance of academic success in spite of being a member
of a risk group (Finn & Rock, 1997). Therefore these students are effectively resilient in their ability to deal with risk and may successfully adapt to life tasks in the face of social disadvantage or adverse conditions (Finn & Rock, 1997). Protective factors central to resilience which include self-esteem, social support and coping have been found to be particularly important factors in the resilience of university students, especially during their first year of study (Brown, 2009; Friborg et al., 2003; Grant-Vallone et al., 2004; Hawley & DeHaan, 1996; Struthers et al., 2000; Ungar, 2004a; Ungar, 2007).

Self-Esteem

Through research self-esteem has emerged as a dispositional attribute of a person that may contribute to resilience (Barker, 2007; Grant-Vallone et al., 2004; Wilson & Gillies, 2005). Self-esteem refers to an individual’s sense of his or her value or worth, or to the extent to which a person values, approves of, appreciates, prizes, or likes him or herself (Blaskovich & Tomaka, 1991). Students with high levels of self esteem have been found to adjust more effectively, both socially and academically, within university environments (Pritchard, Wilson, & Yamnitz, 2007). For example, higher levels of self-esteem have been shown to predict fewer stressors over time and have been associated with the use of more effective coping strategies and greater persistence in the face of failure or setbacks (Barker, 2007). On the other hand, low self-esteem may result in vulnerability to negative outcomes associated with exposure to stressful experiences, such as depressive symptoms, which in turn generate further stressful experiences (Barker, 2007).

Increasing self-esteem has become an objective of many interventions targeted towards students at risk (Finn & Rock, 1997). Although researchers have pointed to low self-esteem as an explanation for academic failure, there is little evidence that low self-esteem is an academic risk factor (Finn & Rock, 1997). Research has found that, generally, self-esteem is more so related to achievement test scores and grades, rather than academic failure.
Contrary to this finding, further research has suggested that although self-esteem may not
directly relate to academic success or failure, it contributes to more effective coping, which in
turn leads to motivation and better adjustment to stress and subsequently success and
persistence. For example, Barker (2007) suggested that providing the individual a measure of
resilience in response to stress, self-esteem serves as a moderator of stress outcomes,
inhibiting stress proliferation indirectly through its effect on choice of coping strategy, and in
particular, a positive association with more effective coping strategies and less avoidance.
Barker (2007) investigated the interrelations of depressive symptoms, personal resources, and
coping as antecedents of stressful experiences (hassles) using a prospective design. Results
indicated a significant and directive positive effect on the use of problem-focused coping.
More specifically, self-esteem had significant indirect effects on all four hassle variables, but
no direct affect on any of them. Barker (2007) stated that this finding suggested that although
self-esteem was not directly related to stressful experiences it led to the use of more effective
coping strategies that served to mediate stress. Furthermore, consistent with previous
research, a separate regression of problem-focused coping on depressive symptoms attained
significance only after self-esteem had been entered into the equation. Barker (2007) did,
however, note that one limitation of his research was the exclusion of additional personal
resources such as mastery, optimism and locus of control, which have been found, in addition
to self-esteem, to be a relevant factor for selecting people into and out of stressful
circumstances.

One research study that did include personal resources such as optimism and locus of
control drawing on self-esteem as a moderator of stress, was conducted by Aspinwall and
Taylor (1992). They suggested that people with high levels of self-esteem may be more
resilient in the face of stressful events, because they may be less vulnerable to threatening
self-relevant aspects of stressful events. This research supported the findings by Barker
that a sense of high self-esteem may similarly lead people to adopt more effective coping strategies. The transition and adjustment to university is a particularly stressful time for students (Tinto, 2006). Thus, research has suggested that those students who exhibit higher self-esteem use more effective coping skills to overcome stress, which in turn predicts better adjustment to university, compared to those who have lower self-esteem (Aspinwall & Taylor, 1992; Barker, 2007; Grant-Vallone et al., 2004). Aspinwall and Taylor (1992) explored optimism, locus of control and self-esteem as longitudinal predictors of adjustment to college in a sample of 672 freshmen (undergraduate students). Consistent with Barker’s (2007) research, results indicated that higher self-esteem predicted less use of avoidant coping strategies, whereby, avoidant coping predicted less successful adjustment to college. Aspinwall and Taylor (1992) further stated that respondents who demonstrated higher self-esteem and locus of control on academic performance showed increased motivation to succeed in college. Finally, results indicated that self-esteem was directly linked to support seeking, which further predicted better adjustment to college.

In response to findings that high self-esteem also promotes social adjustment, Grant-Vallone and colleagues (2004) analysed the effects of self-esteem, social support, and student support services on student commitment and adjustment to college. Results indicated that students reporting higher levels of self-esteem had better social and academic adjustment. Their study employed the collection of survey data from 118 first year college students to examine the relationship between self-esteem, family support, peer support, program utilisation, and academic and social adjustment and college commitment. Grant-Vallone et al. (2004) used ten items from the Rosenberg (1965) self-esteem scale to measure student’s level of self-esteem. They stated that this scale had been used extensively in past research, measured a more global construct of self-esteem and was shown to have good reliability alpha (α = .83). Student adjustment was measured using the Student Adaptation to College
Questionnaire (SACQ) and social support was measured by the Perceived Social Support-Family Measure (PSS-Fa). Results indicated that students with higher self-esteem and levels of peer support reported better academic and social adjustment (Grant-Vallone et al., 2004). They further stated that students who felt greater social involvement in campus life and who were better adjusted to the academic environment were more likely to report that they were committed to their university (Grant-Vallone et al., 2004). They concluded that social adjustment and self-esteem appeared to be an important factor in university commitment (Grant-Vallone et al., 2004). Grant-Vallone et al. (2004) did note implications of their research including a sample based upon only one university and the use of self-report surveys which may be subject to bias.

In summary, research has suggested that self-esteem predicts more effective adjustment and resilience in students due to the fact that motivation, persistence, social adjustment and performance are enhanced by self-esteem, where increased motivation is associated with greater persistence at tasks and a correspondingly greater likelihood that one will succeed in achieving one's goals (Apinwall & Taylor, 1992). Similarly, a sense of high self-esteem may lead people to adopt effective coping strategies (Aspinwall & Taylor, 1992). However, due to the inconsistencies concerning whether or not self-esteem relates to academic failure or success, as stated by Finn and Rock (1997), more research is needed to investigate the relationship between self-esteem and university persistence, and subsequently resilience. One finding that is consistent throughout the literature is that individuals high in self-esteem tend to engage in more prosocial behaviour and appear to have more positive social relationships. Such positive social relationships facilitate emotional and physical functioning (Aspinwall & Taylor, 1992). Furthermore, research has demonstrated that social support effectively reduces distress during times of stress (Aspinwall & Taylor, 1992).
Social Support

Along with self-esteem, social support has been found to be a contributing factor of university success and has been suggested to be a protective factor in promoting the development of resilience in students (Brissette, Scheier, & Carver, 2002; Urquhart & Pooley, 2007). Due to the fact that social support is an important predictor of health, this factor may be particularly critical during life transitions, such as the transition to university (Srivastava, McGonigal, Tamir, John, & Gross, 2009). Social support involves the presence of others (e.g., partners, friends, and family members) and/or the psychological and material resources provided by such individuals (Wilson & Gillies, 2005). Researchers have found that social support, before, during, or after a stressful life event is influential in reducing an individual’s level of psychological distress and contributes positively to life satisfaction and adjustment (Newman et al., 2007). In terms of educational settings, the experience of social support generates a sense of belonging which, in turn, leads to increased engagement and academic motivation (McNeely & Falci, 2004). For example, research by Napoli and Wortman (1998) found that students who receive high levels of social support from their peers and family earned higher first-year grade point averages, reported higher levels of satisfaction with college, and indicated increased social and academic adjustment. Due to the culturally homogenous sample of students (mostly white) in this study the results may not be generalised across ethnicity and may not be representative of the university student population as a whole.

In response to the above research, Dennis, Phinney, and Chuateco (2005) conducted research with first year college students from ethnic minorities and found that those who reported more peer support or higher levels of friendship quality displayed higher academic performance, lower levels of depression and anxiety, and lower levels of perceived distress. From their results, Dennis et al. (2005) inferred that family and peer support produced a self-
identity capable of perceiving life transitions such as the move to university, as challenges rather than threats, by encouraging environmental exploration while also providing a safe place to rely on when challenges far exceed one’s ability to cope. They therefore concluded that secure social support systems facilitated exploration and risk-taking activities in a university-based setting, as well as encouraging individuals to adopt a strong belief in their ability to complete their academic goals (Dennis et al., 2005). Furthermore, contrary to research by Napoli and Wortman (1998), their research examined social support across ethnicity, therefore providing a more holistic view of the notion that social support contributes significantly to increased social and academic adjustment to university. Although both these studies found social support to be significant in academic and social adjustment, neither examined social support in terms of resilience.

More recently Brown (2009) examined the importance of socialisation and perceived social support in the resilience of African Americans. She hypothesised that perceived social support and racial socialisation would predict the resilience of 154 African American undergraduates at university. Each student was measured on their response to the Multidimensional Scale of Perceived Social Support, an instrument designed to assess the perceptions of social support adequacy from one’s family, friends and significant others. Brown (2009) stated that this scale addresses the issue of examining social support that may be culturally or developmentally unique to various individuals, for example, support provided by individuals who are not immediate family. Results suggested that, as hypothesised, racial socialisation and perceived social support significantly predicted the resilience of students in her sample (Brown, 2009). Furthermore, Brown (2009) found that having the support of a special person was significantly associated with student’s resilience. Brown (2009) stated that having a role model or an adult in the community that students can turn to may be what separates the individuals who succeed from the individuals who fall victim to their
circumstance. The results of this study were, however, cross-sectional, therefore Brown (2009) cautioned that the causal direction of the results cannot be confirmed. Furthermore, she noted that due to the over-representation of females \( n = 108 \) compared to males \( n = 45 \), gender was not able to be assessed in terms of the resilience of students.

Gender differences concerning social support are important to note, as research has suggested that men and women engage themselves differently in social relationships with others, and appear to differ in the support they seek from such relationships (Day & Livingstone, 2003). This is especially so when one considers that females comprise around two thirds of the university population (Greenglass, 1993). Day and Livingstone (2003) stated that in general, women tend to not only use social support more than men, but have also been found to provide it more. Women and men have also been found to use different sources of social support. For example, Greenglass (1993) found that men indicated higher perceived social support from their boss, whereas women tended to cope more effectively when turning to friends and co-workers for support. Furthermore, females tend to have larger support networks than do males (Day & Livingstone, 2003).

Day and Livingstone (2003) examined the gender differences in the perceived stress and social support, of 186 participants (72 men and 114 women). Consistent with previous research (Greenglass, 1993), they reported that women would seek support from their friends and family members to a greater degree than did men in order to cope with stressful situations. In an attempt to explain this gender difference, Day and Livingstone (2003) suggested that these differences may stem from traditional gender-role stereotypes of men and women. For example, men may not turn to others for help because this is inconsistent with male gender-role expectations; however, it may be more acceptable for females to tell their problems to others (Day & Livingstone, 2003). As with all research using a convenience sample, Day and Livingstone (2003) stated that their findings may not generalise to the
overall Canadian population. They noted that the age of the students studied presented unique developmental issues as they were in a stage of developmental transition between adolescence and adulthood. Therefore any gender differences in social support and perceptions of stress at this age may not generalise to older males and females (Day & Livingstone, 2003). Finally, although researchers have argued that perception is more important than the actual support that is available and used, the authors noted that due to their conceptualisation of social support in terms of perceived support, potential discrepancies may be evident in what support people identify as being available, what support is actually available, and support people actually mobilise.

In summary social challenges are among the most prominent in transition as compared to those challenges in the academic domain (Srivastava et al., 2009; Urquhart & Pooley, 2007). The transition to university disrupts existing social support networks, separating individuals from high school friends and family and forcing them to form new relationships (Srivastava et al., 2009). As stated by Dennis et al. (2005), the perception of support availability provides a safety net that permits the active participation, exploration, and experimentation in a wide range of life experiences, resulting in the acquisition of coping strategies, skills and self confidence required for the successful adaptation and the development of resilience during the transition to university. As can be seen, previous research suggests that individuals who have a high perception of social support are likely to have better skills and self confidence and may more effectively master new situations and challenges (Cutrona, Cole, Colangelo, Assouline, & Russel, 1994). Similarly, coping has further been found to assist students in developing resilience when faced with the challenge of adjusting to university.
Coping

Although the transition to university is anxiety provoking for many first year students, some individuals discover effective ways to cope with these challenges and function effectively (Wilson & Gillies, 2005). Coping is viewed as a stabilising factor that can help individuals maintain psychological adaptation during stressful periods, such as the transition to university (Valentiner, Holahan, & Moos, 1994). Coping may be defined as the behavioural and cognitive efforts employed by individuals during the course of a particular stressful event (Wilson & Gillies, 2005). Coping responses may be classified as strategies oriented towards confronting and approaching the problem, and strategies oriented towards avoiding dealing directly with the problem (Valentiner et al., 1994). Another distinction between coping modes refers to Problem-Focused Coping (PFC) defined as dealing with stress in terms of rectifying the problem or Emotion-Focused Coping (EFC) which is described as dealing with stress in terms of the emotional and physiological outcomes. In general, more PFC or greater proportions of PFC are associated with better psychological outcomes and more or greater proportions of EFC with poorer outcomes (Valentiner et al., 1994).

Problem-Focused Coping and Emotion-Focused Coping

Folkman and Lazarus (1985) stated that students cope with negative events in three stages: (1) primary appraisal of the situation and realising the threat; (2) bringing to mind the potential responses that can be made; and, (3) coping or the execution of coping responses. Within these stages are two ways of coping including PFC (thoughts, actions and strategies geared towards removing or diminishing a stressful event or its impact, operates when it is believed something can be done about the situation), and EFC (thoughts, actions, and strategies directed towards the management and reduction of distressing emotions associated with a threatening event, invoked when one perceives a stressor must be endured).
In terms of EFC versus PFC, much research has suggested that PFC is the most effective and appropriate way to deal with controlled stressful encounters (e.g., university; Ben-Zur, 2009; Carver, Scheier, & Weintraub, 1989). In stressful situations, PFC may help by altering the meaning of the situation and focusing attention on specific goals, thereby allowing the individual to feel in control of the situation (Ben-Zur, 2009). Thus, PFC aims to change the relevant conflict or problem (Leipold & Greve, 2009). In contrast, EFC is considered by some researchers to be the least effective coping mode, because it prevents the person from attempting to solve the problem and blocks his/her awareness that the situation may change for the better (Ben-Zur, 2009; Carver et al., 1989). Therefore, EFC serves to regulate the burdensome emotions. This coping mode has been found to correlate with more negative outcomes (i.e., less positive affect and more negative affect; Ben-Zur, 2009).

For example, Ben-Zur (2009) tested differential associations between coping styles and positive and negative affect of 480 adolescents, university students and individuals from the general population. Ben-Zur (1990) found that across each of the demographic groups PFC was positively related to positive affect and negatively related to negative affect, whereas EFC showed the opposite pattern of associations with positive and negative affect. Furthermore, PFC was found to be a moderator of avoidance coping effects on both positive and negative affect responses, concluding that PFC is an important factor in well-being during normal everyday life (Ben-Zur, 2009). This study, however, assessed PFC across three different demographic populations, namely adolescents, university students and individuals from the general population. Although Ben-Zur’s (2009) research can be effectively generalised to the general population, it did not take into account specific measures of the use of PFC in educational settings.

Relative to educational settings, such as university, students who avoid dealing with stressful situations and use more EFC, may be characterised by detriments to psychological
functioning as well as physical functioning, whereby maladaptive efforts to cope with stressful situations may contribute to or exacerbate symptoms (Steinhardt & Dolbier, 2008). Steinhardt and Dolbier (2008) stated that, in particular, EFC and avoidant coping strategies typically result in negative psychological and physical outcomes. However, relative to the protective factor model of resilience, research suggests that some coping strategies, such as PFC are protective in that they enable an individual to cope with the stressful situation successfully and recover (Steinhardt & Dolbier, 2008).

For example, in evaluating the “Transforming Lives Through Resilience Education” program which promotes the use of PFC rather than EFC in the development of resilience, Steinhardt and Dolbier (2008) found that students eliciting more effective coping strategies (i.e., higher PFC and lower EFC) performed better on tests of resilience. Furthermore, results indicated that the experimental group (those receiving the intervention) had greater resilience and higher scores on the protective factors of self-esteem, self-leadership and positive affect, compared to lower scores on depressive symptoms, negative affect and perceived stress. This research, however, was problematic in that it used the COPE scale (Carver et al., 1989) to measure student coping. Because the COPE scale was designed to measure coping in the general population across many different situations, it may be less sensitive in measuring how university students specifically cope in academic settings (Struthers et al., 2000). Therefore, research conducted by Struthers and colleagues (2000) provided a more thorough understanding of coping strategies employed by university students.

Struthers and colleagues (2000) examined the relationship among academic stress, motivation and coping styles (PFC and EFC) in college performance. Struthers et al. (2000) measured 312 college students coping styles using three motivation items, course grades, academic stress items and the Student Coping Instrument (SCOPE). The SCOPE is a 30 item scale based largely on the COPE scale, however the SCOPE assesses various thoughts,
actions and strategies associated with routine coping following poor academic performances (Struthers et al., 2000). The scale comprises two subscales, PFC (general active coping, academic planning, active study coping and efficacy) and EFC (emotional venting, general emotional support, denial and academic disengagement; Struthers et al., 2000). Results demonstrated that the relationship between college student’s stress and course grade qualified their academic coping style and motivation (Struthers et al., 2000). Specifically, results indicated that college students’ stress at the beginning of the year directly and positively predicted their use of PFC, and motivation and inversely predicted their course grade at the end of the year (Struthers et al., 2000). Additional direct positive relationships emerged between PFC and motivation, and motivation and grade (Struthers et al., 2000). Furthermore, a nonsignificant path was found between EFC and motivation. Thus, the authors concluded that PFC plays a meaningful role in the motivation and performance of college students, and subsequently academic achievement, however, EFC does not.

A review of the literature, therefore states that, firstly, effective coping strategies may significantly increase the successful adjustment, psychological functioning and well-being of individuals when faced with stressful situations. Secondly, due to the high amounts of pressure and stress university students face, not only during the transition to university, but also during the course of their studies, it has been found that effective coping strategies serve as a buffer for university students when faced with such stress. Finally, in terms of the most effective coping strategy, extensive literature points to PFC rather than EFC, as PFC helps by altering the meaning of the situation and focusing attention on specific goals, thereby allowing the individual to feel in control of the situation. Such a coping strategy is imperative in the resilience of university students.

In summary, the transition from one context to another poses many challenges and difficulties, and the move to and through university is no exception. Many university students
do not effectively adapt to their new environment, and thus withdraw, change course or transfer to other institutions or enter the workplace. Such attrition is not only detrimental to the university and the student, but also impacts upon the wider community. Much research has examined the factors contributing to attrition at tertiary institutions however there is a lack of research concerning more positive factors relative to the retention of university students, especially in Australia. Resilience research and theory provides further understanding in this area. Resilience research suggests that university students may be deemed resilient if they are effectively able to contend with and adapt to university life with relatively few problems and find themselves accepting their challenges as an opportunity for growth and learning. Research has also pointed to three protective constructs central to the development of resilience including social support, the ability to use PFC and high self-esteem. In conclusion a review of the literature suggests that university students who exhibit high measures of social support, PFC and self-esteem are more likely to be resilient and persevere with their studies at university.

Overview of the Present Study

The purpose of the proposed study was to assess dispositional attributes including self-esteem, coping, and social support as predictors of resilience, to determine the success and continuation of second year university students. Much of the previous literature has focused on transition from high school, the workforce, or after raising a family, to university. However, there is a lack of research concerning the transition between first and second year university students and the positive factors which may have contributed to the retention of these students. Research in this area is important due to the high rate of attrition of first year university students and the subsequent implications, both personally and for the community. In addition, in light of the lack of relevant research, it is important to measure psychological aspects of students that contribute to retention, rather than attrition during tertiary education
in order to inform the implementation of policies and strategies aimed at increasing the retention of university students.

This study sought to examine dispositional attributes contributing to the success and resilience of second year university students, in particular, self-esteem, coping and social support. First, it was proposed that higher levels of self-esteem would be found in students eliciting higher levels of resilience, as found by Grant-Vallone et al. (2004). Second, in line with research conducted by Brown (2009) it was proposed that students higher in perceived social support would predict higher scores on resilience measures. Third, guided by previous research conducted by Struthers et al. (2000) it was further hypothesised that those students scoring higher on measures of resilience would similarly exhibit a higher use of PFC. These factors taken together were also hypothesised to ensure that the student would be more likely to continue to succeed at university.

The research question for this study was:

1) Do social support, self-esteem and coping measures significantly and independently predict resilience?

The hypotheses for this study were:

1) Students higher in self-esteem will score higher on a measure of resilience.

2) Students higher in perceived social support will score higher on a measure of resilience.

3) Students higher in PFC will score higher on a measure of resilience.

4) Students lower in EFC will score higher on a measure of resilience.
Method

Research Design

This study employed a quantitative correlational design consisting of three independent variables (social support, coping and self-esteem) and one dependent variable (resilience). Questionnaires were administered to measure each variable.

Participants

Participants for this study included 251 (253 prior to data screening) second year students from Edith Cowan University. Of these participants, 38 were male, 206 were female and seven did not disclose gender information. The number of participants required was calculated using the equation $8n + 50$, where $n$ equals the number of independent variables (Tabachnick & Fidell, 2007). To ensure random sampling, students were recruited from all four faculties at Edith Cowan University including Business and Law; Computing, Health and Science; Education and the Arts; and Regional and Professional Studies. Students ranged in age from 18 to 65 years ($M = 24.84$). The reason for the large range in age of participants is due to the fact that not all university students enrol directly from secondary school. Students may have been in the workforce, raised a family, transferred from other tertiary institutions or commenced studies in another course. Edith Cowan University is an access university which has a range of alternative entry pathways in addition to the traditional Tertiary Entrance Rank. Please see Table 1 for the frequencies of participant demographical information.

Materials

Participants were asked to complete a self-administered questionnaire consisting of four sections. The questionnaire took around 10 minutes to complete. Demographic information such as age, gender, faculty and overall grade for previous year of study (C, CR, D, HD) were included in the questionnaire.
### Table 1

**Participant Demographical Information**

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<tr>
<th>Age</th>
<th>Frequency (N)</th>
<th>Percent (%)</th>
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<td>18 – 25</td>
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<tr>
<td>26 – 45</td>
<td>49</td>
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<tr>
<td>46 – 65</td>
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<table>
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<th>Gender</th>
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<td>Male</td>
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<tr>
<td>Female</td>
<td>206</td>
<td>82.10</td>
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<td>Total</td>
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<td>Computing Health and Science</td>
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<tr>
<td>Education and Arts</td>
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<tr>
<td>Regional Professional Studies</td>
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<td>20.30</td>
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<tr>
<td>Total</td>
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<tr>
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<th>Percent (%)</th>
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</table>

*Note. N = 251. Where frequencies do not equal 251 and percentages do not equal 100, the remainder of participants did not disclose demographic information.*
**Resilience.** Section one of the questionnaire assessed the student’s resilience using the Resilience Scale for Adults (Friborg et al., 2003). The scale includes 33 items and a 7-point semantic differential scale format in which each item has a positive and negative attribute at each end of the scale continuum (see Appendix A). An example of one item is, “I feel that my future looks”, where the positive attribute will be “very promising” and the negative attribute will be “uncertain”. In response, students selected the attribute that best described them. Cronbach’s alpha for these items resulted in high reliability (α = .89).

**Self-Esteem.** Section two of the questionnaire incorporated the Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1965) which includes a 10 item scale and yields a four point response ranging from strongly agree to strongly disagree, in which participants were asked to circle the relevant response. For example, one item was “At times I think I am no good at all”, where students circled an appropriate response, choosing from “strongly agree”, “agree”, “disagree”, or “strongly disagree”. Rosenberg (1965) reports face validity for the items, and the scale was short and easy to administer. Scores on the scale ranged from 0 to 30, where the higher the score, the higher the level of self-esteem (Rosenberg, 1965; see Appendix B). This scale reported a high reliability with a Cronbach’s alpha of .85. In line with research conducted by Grant-Vallone and colleagues (2004), this scale was chosen to measure self-esteem due its extensive use in past research and its global measurement of self-esteem.

**Coping.** Section three of the questionnaire assessed the student’s coping styles using the Student Coping Scale (SCOPE; Struthers et al., 2000). This scale is based on the COPE scale (Carver et al., 1989), however, it also employs a set of academic coping strategies students may use in order to adapt to stressful academic – specific situations (Struthers et al., 2000). The scale consists of 30 items assessing thoughts, actions and strategies associated with students coping styles (Struthers et al., 2000). There are two subscales including 15 Problem-Focused Coping (PFC) items and 15 Emotion-Focused
Coping (EFC) items as guided by Struthers et al. (2000). Responses to the items are made using a 10-point Likert scale ranging from (1) "extremely uncharacteristic of me" to (10) "extremely characteristic to me" (see Appendix C). The validity of the SCOPE scale is within acceptable limits (Struthers, et al., 2000), and the scale yielded a Cronbach’s alpha of .89 for the PFC subscale and .77 for the EFC subscale.

*Social Support.* Section four assessed the participant's social support using the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988). The MSPSS self-report measurement consists of a 12 item scale relating to participants' perceived social support from family, friends and a significant other. Participants used a 7-point Likert scale to respond, ranging from (1) "very strongly disagree" to (7) "very strongly agree" (see Appendix D). Use of this scale reported high reliability with a Cronbach’s alpha of .95. Consistent with previous research, this measure of social support was chosen due to its ability to address the issue of examining social support that may be culturally or developmentally unique to various individuals (Brown, 2009).

*Procedure*

Prior to conducting this study, ethics approval was obtained from the Ethics Committee of the Faculty of Computing, Health and Science. Questionnaires were administered in the months of July and August. Participants for this study were recruited through liaising with the Undergraduate Co-ordinators and lecturers within different schools within the Faculty of Computing, Health and Science, Faculty of Business and Law, Faculty of Education and Arts, and Faculty of Regional and Professional Studies at Edith Cowan University. Permission was obtained from the Undergraduate Co-ordinator and lecturers to conduct the study at the end of one of their lectures or seminars. Participation was completely voluntary and anonymous, and no identifying material was collected at any time. Students were accessed at the end of their lecture or seminar and initially the nature of the study was
outlined. Students were provided with an information letter (see Appendix E) outlining the nature of the research and issues of confidentiality. The letter also provided contact details of the researcher and the supervisor (see Appendix E). Students, who were interested in participating in the research study were handed the questionnaires to complete.

The Information Letter was read verbatim to students by the researcher, detailing complete voluntary and anonymous participation, the right to withdraw at any time, and opportunities to seek further information regarding the research. All questionnaires were numerically coded. Consent was implied by completion of the questionnaires. Students who chose to participate in the research were asked to complete the questionnaires and return them to the researcher. Students who did not wish to participate were asked to return the uncompleted questionnaire to the researcher. All questionnaires were collected by the researcher. Participants were rewarded with a chocolate upon completion of the questionnaire.

**Analysis**

The Statistical Package for the Social Sciences (SPSS) version 17.0 was used to analyse data. In order to examine the relationship between resilience, self-esteem, social support, PFC, and EFC, multiple regression analyses were conducted. Regression analyses was used to test the relationships between several independent variables (self-esteem, social support, PFC and EFC) and dependant variable (resilience), indicating how well a group of variables predict the dependant variable (Grant–Vallone et al., 2004). In this analysis, resilience in second year University students represented the criterion and self-esteem, social support, PFC and EFC were the predictor variables.

It was proposed that if, when entered into the standard multiple regression model, self-esteem, social support, and PFC yield an $R$ value significantly different from zero,
higher scores on the scales of self-esteem, coping and social support predict a higher level of resilience in second year University students.

Results

The proposed research question concerned the predictive relationship between resilience and self-esteem, social support, PFC and EFC. In addressing this question, correlations and Multiple Regression Analysis (MRA) were conducted to assess whether these four predictor variable independently and significantly predicted scores on a measure of resilience.

Data Screening

The total number of students in the research was 253. Prior to analysis, data were examined for accuracy of data entry, missing values, and fit between their distributions and the assumptions of MRA. Two cases were omitted from further analysis and 251 cases were included in subsequent analyses. All cases were then checked for systematic responses (i.e., the same answer was given for all questions) and missing data. No systematic responses were evident and all missing data were found to be missing completely at random, comprising no more than 3.8% of the overall sample. Based on these findings a decision was made to use mean substitution whereby means were calculated from available data and used to replace missing values (Tabachnick & Fidell, 2007). This procedure was used as it is the most popular method to estimate missing values, it has been found to be conservative, and the mean for the distribution as a whole does not change (Tabachnick & Fidell, 2007).

Prior to interpreting the results of the MRA, a number of assumptions were evaluated. The assumptions of normality, linearity and homoscedasticity of residuals were met. This was achieved by inspecting the normal probability plot of standardised residuals (see Appendix F) and the scatterplot of standardised residuals against standardised predicted values (see Appendix G). Histograms indicated that normality was assumed for all variables and all data
were positively skewed and leptokurtic. Boxplots indicated no outliers (standardised scores in excess of ±3.00), and normal and detrended Q-Q plots indicated data in each variable was normally distributed. Acceptable levels of tolerances and variance inflation factors indicated that multicollinearity would not interfere with interpretation. Mahalanobis distance exceeded the critical $\chi^2$ for $df = 4$ (at $\alpha = .001$) of 18.47 for three cases in the data file. These cases were not deleted because, after re-running the analysis without them, they made no impact upon the regression model.

Following data screening, the sample size ($N = 251$) met the requirements for standard multiple regression, whereby the minimum number of participants required was 82 as determined by the equation $8n + 50$ (n equals the number of independent variables; Tabachnick & Fidell, 2007).

**Descriptive Statistics**

Descriptive analyses were conducted on both demographic (age, gender, 1st year grade; see Table 1) and psychological factors (resilience, self-esteem, social support PFC, EFC; see Table 2). Inspection of the mean scores and standard deviations revealed that, overall, participants scored high on measures of resilience ($M = 146.38$), from a maximum score of 198. Measures of self-esteem were also quite high ($M = 20.76$) according to Rosenberg (1965) who stated that scores between 15 and 25 are within normal range. The majority of participants also scored very high on measures of social support ($M = 56.03$) from a maximum score of 72. Furthermore, the measure of PFC yielded high scores (85.29) from a maximum of 135. As proposed, participants scored relatively low on measure of EFC ($M = 52.80$) indicating that students were more likely to opt for PFC rather than EFC when facing a setback at University.
**Table 2**

*Means and Standard Deviations for Resilience, Self Esteem, Social Support, PFC and EFC*

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resilience</td>
<td>146.38</td>
<td>22.22</td>
<td>0 – 198</td>
</tr>
<tr>
<td>Self Esteem</td>
<td>20.76</td>
<td>4.02</td>
<td>0 – 30</td>
</tr>
<tr>
<td>Social Support</td>
<td>56.03</td>
<td>15.22</td>
<td>0 – 72</td>
</tr>
<tr>
<td>PFC</td>
<td>85.29</td>
<td>20.92</td>
<td>0 – 135</td>
</tr>
<tr>
<td>EFC</td>
<td>52.80</td>
<td>18.18</td>
<td>0 – 135</td>
</tr>
</tbody>
</table>

*Note.* PFC = Problem-Focused Coping, EFC = Emotion-Focused Coping.

**Correlation Analysis**

A correlation analysis was conducted to examine the nature of the relationship between resilience and self-esteem, social support, PFC and EFC. The correlations among the four predictor variables and resilience are displayed in Table 3. As can be seen, all predictor variables were correlated with resilience, where self-esteem ($r = .52$, $p < .01$), social support ($r = .59$, $p < .01$) and PFC ($r = .50$, $p < .01$) indicated the strongest positive relationships. EFC ($r = .02$) however, was very weakly but positively correlated with resilience. Positive associations between the predictor variables and resilience suggest that the higher the score on each measure of the predictor variables, the higher the score of resilience.
Table 3

*Correlations Between Variables (Resilience, Self Esteem, Social Support, PFC and EFC)*

<table>
<thead>
<tr>
<th>Scale</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Resilience</td>
<td>.52**</td>
<td>.59**</td>
<td>.50**</td>
<td>.02</td>
</tr>
<tr>
<td>2. Self Esteem</td>
<td></td>
<td>.13*</td>
<td>.46**</td>
<td>-.20**</td>
</tr>
<tr>
<td>3. Social Support</td>
<td></td>
<td></td>
<td>.24**</td>
<td>.13*</td>
</tr>
<tr>
<td>4. PFC</td>
<td></td>
<td></td>
<td></td>
<td>-.05</td>
</tr>
<tr>
<td>5. EFC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note, PFC = Problem-Focused Coping; EFC = Emotion-Focused Coping. *p < .05, **p < .01. N = 251.*

**Multiple Regression Analysis**

To examine the research question and hypotheses a standard MRA was conducted. During this analysis, all predictor variables were entered into the regression equation simultaneously and each was assessed as though it had entered the regression after all other predictor variables had entered. Table 4 displays the unstandardised regression coefficients (B), the squared semipartial correlations (SEB) and the standardised regression coefficients (β).

The R value was found to be significantly different from zero, F(4, 246) = 86.05, p < .001, indicating that the regression model for resilience was significant. The model accounted for approximately 58% (R² = .583, Adjusted R² = .576) of the variance of resilience. Analysis of the standardised regression coefficients (β) of the standard MRA, indicated that the predictor variables of self-esteem (37% of the unique variance), social support (48% of the unique variance) and PFC (22% of the unique variance) made significant and unique contributions to the amount of explained variance in the regression model, however EFC (4%
of the unique variance) did not. In summary, self-esteem, social support and PFC were found to be significant predictors of resilience, however EFC was not significant.

Table 4

Summary of Standard Multiple Regression Analyses for Variables Predicting Resilience

<table>
<thead>
<tr>
<th>Predictor Variables</th>
<th>$B$</th>
<th>$SEB$</th>
<th>$\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Esteem</td>
<td>2.02</td>
<td>.26</td>
<td>.37*</td>
</tr>
<tr>
<td>Social Support</td>
<td>.70</td>
<td>.06</td>
<td>.48*</td>
</tr>
<tr>
<td>PFC</td>
<td>.24</td>
<td>.05</td>
<td>.22*</td>
</tr>
<tr>
<td>EFC</td>
<td>.05</td>
<td>.05</td>
<td>.04</td>
</tr>
</tbody>
</table>


Discussion

The current research sought to examine the resilience of second year university students and the contribution of several factors (i.e., self-esteem, social support, Emotion-Focused Coping [EFC] and Problem-Focused Coping [PFC]) to their resilience. This study has contributed to the limited research that has been conducted concerning the resilience of second year university students, in Australia (Cao & Gabb, 2005; McInnis et al., 2000; McInnis, 2001). Furthermore, no known research has examined the constructs of self-esteem, social support and coping (PFC and EFC) in respect to the resilience of second year university students in Australia. Consistent with expectations, results from this study indicated that students with higher levels of self-esteem, social support and PFC significantly predicted higher levels of resilience, $F(4, 246) = 86.05, p < .001$ (Brown, 2009; Grant-Vallone et al., 2004; Struthers et al., 2000). Furthermore, students with lower levels of EFC were found to report higher levels of resilience, as expected (Ben-Zur, 2009). These findings
support the research question of whether higher scores on social support, self esteem and coping measures would predict higher scores on a resilience measure. Participants in this study had successfully completed their first year of study and entered their second year of undergraduate studies.

This study further sought to examine four hypotheses which were also confirmed. First, students scoring higher on measures of self-esteem would score higher on a measure of resilience. This hypothesis was confirmed through standard multiple regression analyses whereby self-esteem independently and significantly predicted resilience and accounted for 37% of the unique variance of the regression model, $F(4, 246) = 86.05, p < .001$. Although there has been a lack of previous research concerning self-esteem in terms of the resilience of university students, this finding was similar to previous research which suggested that students are able to adjust more effectively, both socially and academically, when they exhibited higher levels of self-esteem (Pritchard et al., 2007). Thus, one interpretation of this finding may be that better academic and social adjustment as a result of high self-esteem may have contributed to students high levels of resilience.

The transition, not only to university, but also through university is a particularly stressful time for students and the results of this study contend that students who exhibited the use of more effective coping skills (PFC) to overcome stress, were subsequently better adjusted to university (Aspinwall & Taylor, 1992; Barker, 2007). Consistent with this notion, it is assumed that student’s high levels of self-esteem in this study may have served as a moderator of stress outcomes, which in turn provided the individual with a higher measure of resilience, as previously noted by Barker (2007). Further support for this statement comes from research by Grant-Vallone et al. (2004) who suggested that when faced with transition, students with higher self-esteem and levels of peer support reported better academic and social adjustment, and were more likely to report that they were committed to their
university. However the participants in the research by Grant-Vallone and colleagues (2004) comprised first year college students, whereas the present study focused on second year students. Therefore, taken together, these results suggest that not only is self-esteem important during the transition to university, but it is also important during the transition through university and may contribute to the retention of students.

These findings suggest that self-esteem appears to be an important factor in the development of resilience in second year university students and thereby to their retention and commitment to university. Furthermore, relative to the inconsistencies in the literature concerning whether or not self-esteem relates to the failure or success of students, this finding serves to support evidence that self-esteem is a significant predictor of resilience and therefore the retention and success of university students. As students in this study were second year university students, they had successfully transitioned both to and through university from first to second year. Perhaps if these students were first year university students still struggling with adjustment and transition, they may not have shown such high levels of self-esteem (Barker, 2007; McInnis et al., 2000).

Third, findings support the hypothesis that students scoring higher on a measure of PFC would score higher on a measure of resilience whereby PFC significantly and independently predicted resilience and contributed 22% of the unique variance of the regression model, $F(4, 246) = 86.05, p< .001$. This finding concurs with previous research that suggested, relative to educational settings, students using more PFC performed better on measures of resilience (Steinhardt & Dolbier, 2008). University students using more PFC in this sample were able to alter the meaning of stressful situations faced at university and focus on specific goals, thereby feeling in control of the situation (Ben-Zur, 2009). Further support is provided by Struthers et al. (2000) who found that college students stress at the beginning of the year directly and positively predicted their use of PFC.
Relative to the protective factor model of resilience, research has found that coping strategies such as PFC are protective in that they enable the individual to cope with stressful situations successfully and recover (Steinhardt & Dolbier, 2008). Therefore, the use of PFC by students in this study, contributed to their development of resilience. PFC has been found to be related with other protective factors such as self-esteem, providing possible reasoning for the similarly high levels of self-esteem in students in this study. Consistent with previous research (Struthers et al., 2000) students in this study who reported higher levels of PFC were likely to demonstrate higher levels of motivation, which also may have contributed to their retention.

Fourth, results indicated that the hypothesis that students with lower EFC would score higher on a measure of resilience was confirmed whereby EFC did not significantly predict resilience and explained only 4% of the unique variance, $F(4, 246) = 86.05, p < .001$. Although there is a lack of previous research examining the relationship between EFC and student resilience, this finding is comparable to research conducted by Struthers and colleagues (2000) who found a non-significant relationship between EFC and motivation on student responses to the SCOPE instrument. This finding is important, as previous research suggested that EFC may be associated with poorer outcomes as it prevents an individual from attempting to solve a problem and may block his/her awareness that a situation may change for the better (Ben-Zur, 2009). Therefore relative to university life, the use of EFC rather than PFC may have significant detrimental effects on students psychological and physical functioning (Steinhardt & Dolbier, 2008). Consequently the finding that students in this study exhibited lower levels of EFC and higher levels of resilience suggests that EFC may be the less effective coping method (EFC and PFC) and students that elicit lower levels of EFC will effectively be more resilient when faced with aspects central to university life.
The correlations between variables in this study are noteworthy. Although low ($r = .13$), the relationship between self-esteem and social support was found to be significant. This finding is not surprising as previous research (e.g., Grant-Vallone and colleagues, 2004) has indicated that students who reported higher levels of self-esteem, similarly reported better social adjustment. Furthermore Aspinwall and Taylor (1992) reported a connection between self-esteem and social support, which further predicted better adjustment to college in their study on student adjustment to university. Perhaps individuals high in self-esteem appear to have more positive social relationships, and vice versa, and such positive relationships facilitate emotional and physical functioning that assists in the development of resilience.

The relationship between EFC and self-esteem was significant, with a low to moderate negative relationship ($r = -.20$). This finding suggests that those with higher self-esteem tend to use less EFC when faced with an academic setback, preferring the more goal specific and controlled approach of PFC. Consistent with previous research, this finding indicates that higher self-esteem predicts less use of avoidant coping strategies, whereby, avoidant coping predicts less successful adjustment to college (Barker, 2007). This assumption is further supported by the significant correlation between self-esteem and PFC ($r = .46$) which showed a moderate, positive relationship, indicating that those students who were high in self-esteem were also higher in PFC. This result may be due to the fact that self-esteem leads to the use of coping strategies that serve to mediate stress (Barker, 2007). For example, Barker (2007) suggested that higher levels of self-esteem have been shown to predict fewer stressors over time and have been associated with the use of more effective coping strategies and greater persistence in the face of failure and setbacks. Subsequently, the use of more effective coping skills, such as PFC, has been found to contribute to better adjustment to university (Barker, 2007). An issue with this finding is whether higher PFC predicts higher self-esteem or vice versa.
The significant relationship between social support and EFC, although positive, was low \( (r = .13) \). The relationship between social support and PFC was also significant, however the correlation was low to moderate and positive \( (r = .24) \). This higher correlation between PFC and social support indicates that students higher in social support tended to use more PFC than students lower in social support. A reason may be that social support acts as a buffer for stress therefore those with higher social support may perceive challenges as more surmountable and use PFC rather than EFC to counteract stress, as compared to students lower in perceived social support (Dennis et al., 2005). Consequently students lower in social support may tend to adopt a more EFC approach to university stressors.

In addition the correlation between EFC and PFC was found to be neither significant nor positive. Furthermore, the correlation was very low \( (r = -.05) \). Even though these two coping methods differ to some degree, it was expected that they would correlate highly with each other as they are both constructs of coping. A reason may be that EFC has similarly been found to correlate with more negative outcomes such as less positive affect and more negative affect (Ben-Zur, 2009). As results suggest that PFC significantly predicted resilience and was positively correlated with outcomes such self-esteem and social support, whereas EFC showed the opposite pattern of associations, one may conclude that this result could be due to the conflicting constructs of EFC and PFC.

In summary, the results indicated that social support, self-esteem and coping (PFC) significantly and independently predicted resilience. Overall resilience scores were high therefore according to the protective factor model of resilience, students in this study were able to ensure that they recovered from or avoided negative outcomes from unfavourable conditions whilst studying at university (Leipold & Grieve, 2009). The protective factor model of resilience suggests that there are three sets of protective factors implicated in the development of resilience including: psychological/dispositional attributes of the individual,
family support and cohesion, and external support systems (Friborg et al., 2003). In terms of the psychological/dispositional attributes of an individual, resilience denotes an individual’s stability under significant adverse conditions (Ungar, 2008). The present results suggest that self-esteem and PFC as dispositional attributes of an individual each serve as a protective factor in the development of resilience in university students. This is further supported by the fact that students in this study were second year students who had successfully completed their first year of undergraduate studies. Their success may be due to them overcoming the adjustment and transition to university as they possess higher levels of self-esteem and PFC, which are protective factors contributing to resilience.

Relative to family support and cohesion, students scored highly on a measure of social support, indicating that the majority of students have appropriate social networks that are accessible when required. Research conducted by Ungar (2004b) suggested that even the presence of at least one adult who takes a strong interest in an individual and provides complex challenges in life, may enable that individual to overcome adversity. Although it was not assessed in the present research, the collaboration of students and faculty members in a way that promotes social and academic support networks may be one possible reason as to why students scored so highly on measures of resilience (Tinto, 2006). Therefore it is possible that either fellow students or faculty members may have been the basis for which the protective factor of social support was centred upon for many students in this study.

In terms of well-defined external support systems relative to the protective factor model of resilience, it is possible that staff members, faculty members, support officers, lecturers and co-ordinators located on campus, may have assisted in providing the resources and opportunities for the development of resilience in students in this study (Ungar, 2007). However this is speculative and based on previous research, as it was not assessed in the present research (Ungar, 2007). Results of this research suggest that constructs central to the
A strength of this study was that the participants were drawn randomly from all four faculties of the university. Therefore, contrary to the findings of Steinhardt and Dolbier (2008) the results of this study may be representative of the university population from which they were drawn. Furthermore as noted by Struthers et al. (2000), contrary to previous research (Steinhardt & Dolbier, 2008), this study implemented the use of the Student Coping Scale (SCOPE) to assess coping, which assesses various thoughts, actions and strategies associated with routine coping following academic performances. The use of this scale suggests that the coping scores obtained in this research provide a more sensitive measurement of how university students cope specifically in academic settings, rather than previous research which implemented the COPE scale which was designed to measure coping in the general population (Steinhardt & Dolbier, 2008).

Similarly, the use of the Multidimensional Scale of Perceived Social Support (MDSPSS) contributed to this study. The measurement of perceived social support in this study was appropriate due to the finding that the perception of social support is more important than the actual support available, especially for students (Day & Livingstone, 2003). This perception of social support was evident in the present study and it is assumed that such a perception resulted in the acquisition of coping strategies, skills and self confidence required for the successful adaptation and development of resilience during the transition both to and through university (Dennis et al., 2005). In addition, the MDSPSS includes the measurement of perceived social support relative to a significant other, as noted by Brown (2009). This meant that this study was able to address the issue of examining social support that may be academically or developmentally unique to various individuals. For
example support that may be provided by individuals that are not immediate family such as teaching staff on campus.

Limitations

No research is without limitations, and a number of limitations of the present research must be noted. First, as stated by Grant-Vallone et al. (2004) this study used self-report questionnaires which are subject to bias, therefore any results found are correlational and causality cannot be inferred. For example, questionnaire responses may have been untruthful due to social desirability of responses or inaccurate due to lack of self-awareness on the part of the participants. Second, the sample of students for this study was taken from only one university and results cannot be generalised to the university population as a whole as noted by Grant-Vallone et al. (2004). Third, as previously stated, the sample collected was predominantly female. This is not surprising as research has found that females comprise around two thirds of the university population (Greenglass, 1993), however, it may suggest that the results found may be more attributable to female students rather than male students. As the female to male ratio was high, the examination of gender differences across the study was not possible. Finally, there is always the possibility that the pattern of results found by this study may be accounted for by unassessed variables. As with any correlational study, the possibility that an unmeasured factor or factors may account for the pattern of relations found in the present study is feasible.

Future Research

Future research in this area may benefit from collecting an equal sample of males and females to assess gender differences across the dispositional attributes of resilience in university students. In line with previous research, there appears to be differences in the experience of resilience across cultures (Brown, 2009; Dennis et al., 2005), therefore future research may benefit from assessing self-esteem, social support and coping across ethnicity in
order to gain a more culturally specific measure of how these three constructs affect the resilience of university students from different cultures. Finally due to time constraints and the simplicity of this study, students who did withdraw after their first year of study were not able to be accessed and compared with those who did not withdraw. Future research would benefit from this comparison in order to gain a better understanding of the role of self-esteem, social support and coping in the resilience of university students.

**Conclusion**

This purpose of this research was to examine dispositional attributes contributing to the success and resilience of second year university students, in particular, self-esteem, social support and coping. Results indicated that self-esteem, social support and PFC significantly and independently predicted resilience in a sample of second year university students. This research resulted from the finding that Australian universities are becoming increasingly concerned with retention rates. A review of the literature suggested that an understanding of the dispositional attributes central to resilience, such as self-esteem, social support and coping, is imperative to the retention efforts of Australian universities and may aide in developing policies and strategies aimed at student retention. Therefore rather than focusing on the more negative attributes of attrition and students who withdraw, this study focused on the more positive factors that contribute to the retention of students. In doing so, this research examined second year university students, rather than first year university students, in an attempt to understand their resilience. Furthermore, much of the relevant previous literature concerning tertiary student transition has focused on transition to university. This research shifted the focus to transition through university, from one educational year to the next. Therefore a focus on retention rather than attrition, enables Australian universities to promote dispositional attributes of individuals, such as self-esteem, social support and coping, which
may contribute to resilience, to encourage the perseverance, retention and subsequently success of Australian university students.
References


Appendix A: Questionnaire Section 1

**Questionnaire**

**Age:** ____________

**Gender (Please Circle):**
- M
- F

**Faculty (Please Circle):**
- Business and Law
- Computing, Health and Science
- Education and Arts
- Regional Professional Studies

**Overall 1st Year Grade (Please Circle):**
- C
- CR
- D
- HD

### Section 1

Instructions: Please think about how you usually are, or how you have been the last month, how you think and feel about yourself, and about important people surrounding you. Please cross the option box that is closest to the end statement that describes you best.

**Example**

When I’m at University, I feel  
Bored ☐ ☐ ☐ ☐ ☐ ☑ Excited

By crossing the 6th box along, you are suggesting that when you are at university you mostly feel excited.

If you were to cross the 2nd box along, you would be suggesting that when at university you mostly feel bored. If you were to cross the 4th box along, you would be suggesting that you feel neutral about being at University.

<table>
<thead>
<tr>
<th></th>
<th>My plans for the future</th>
<th>Possible to accomplish</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>are difficult to accomplish</td>
<td>☐ ☐ ☐ ☐ ☐</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>When something unforeseen happens</th>
<th>I often feel bewildered</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>I always find a solution</td>
<td>☐ ☐ ☐ ☐ ☐</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>My family’s understanding of what is important in life is</th>
<th>Very similar to mine</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.</td>
<td>quite different than mine</td>
<td>☐ ☐ ☐ ☐ ☐</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>I feel that my future looks</th>
<th>Uncertain</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.</td>
<td>very promising</td>
<td>☐ ☐ ☐ ☐ ☐</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>My future goals</th>
<th>I am unsure how to accomplish</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.</td>
<td>I know how to accomplish</td>
<td>☐ ☐ ☐ ☐ ☐</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>I can discuss personal issues with</th>
<th>Friends/family members</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.</td>
<td>no one</td>
<td>☐ ☐ ☐ ☐ ☐</td>
</tr>
<tr>
<td>Question</td>
<td>Option A</td>
<td>Option B</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------------------------</td>
<td>----------</td>
<td>----------</td>
</tr>
<tr>
<td>7. I feel</td>
<td>Very happy with my family</td>
<td></td>
</tr>
<tr>
<td>8. I enjoy being</td>
<td>Together with other people</td>
<td></td>
</tr>
<tr>
<td>9. Those who are good at encouraging me are</td>
<td>Some close friends/family members</td>
<td></td>
</tr>
<tr>
<td>10. The bonds among my friends is</td>
<td>Weak</td>
<td></td>
</tr>
<tr>
<td>11. My personal problems</td>
<td>Are unsolvable</td>
<td></td>
</tr>
<tr>
<td>12. When a family member experiences a crisis/emergency</td>
<td>I am informed right away</td>
<td></td>
</tr>
<tr>
<td>13. My family is characterised by</td>
<td>Disconnection</td>
<td></td>
</tr>
<tr>
<td>14. To be flexible in social settings</td>
<td>Is not important to me</td>
<td></td>
</tr>
<tr>
<td>15. I get support from</td>
<td>Friends/family members</td>
<td></td>
</tr>
<tr>
<td>16. In difficult periods my family</td>
<td>Keeps a positive outlook on the future</td>
<td></td>
</tr>
<tr>
<td>17. My abilities</td>
<td>I strongly believe in</td>
<td></td>
</tr>
<tr>
<td>18. My judgment and decisions</td>
<td>I often doubt</td>
<td></td>
</tr>
<tr>
<td>19. New friendships are something</td>
<td>I make easily</td>
<td></td>
</tr>
<tr>
<td>20. When needed, I have</td>
<td>No one who can help me</td>
<td></td>
</tr>
<tr>
<td>21. I am at my best when I</td>
<td>Have a clear goal to strive for</td>
<td></td>
</tr>
<tr>
<td>22. Meeting new people is</td>
<td>Difficult for me</td>
<td></td>
</tr>
<tr>
<td>23. When I am with others</td>
<td>I easily laugh</td>
<td></td>
</tr>
<tr>
<td>24. When I start on new projects/things</td>
<td>I rarely plan ahead, just get on with it</td>
<td></td>
</tr>
<tr>
<td>25. Facing other people, our family acts</td>
<td>Unsupportive of one another</td>
<td></td>
</tr>
<tr>
<td>26. For me, thinking of good topics for conversation is</td>
<td>Difficult</td>
<td></td>
</tr>
<tr>
<td>27. My close friends/family members</td>
<td>Appreciate my qualities</td>
<td></td>
</tr>
<tr>
<td>Question</td>
<td>Option 1</td>
<td>Option 2</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>--------------------------------------------------------</td>
<td>--------------------------------------------------------</td>
</tr>
<tr>
<td>28. I am good at</td>
<td>Organising my time</td>
<td>Wasting my time</td>
</tr>
<tr>
<td>29. In my family we like to</td>
<td>Do things on our own</td>
<td>Do things together</td>
</tr>
<tr>
<td>30. Rules and regular routines</td>
<td>Are absent in my everyday life</td>
<td>Simplify my everyday life</td>
</tr>
<tr>
<td>31. In difficult periods I have a tendency to</td>
<td>View everything gloomy</td>
<td>Find something good that helps me thrive/prosper</td>
</tr>
<tr>
<td>32. My goals for the future are</td>
<td>Unclear</td>
<td>Well thought through</td>
</tr>
<tr>
<td>33. Events in my life that I cannot influence</td>
<td>I manage to come to terms with</td>
<td>Are a constant source of worry/concern</td>
</tr>
</tbody>
</table>
Appendix B: Questionnaire Section 2

**Section 2**

**Instructions:** Please circle the response that you feel is most appropriate for you. Read each statement carefully.

**Example**

I enjoy University! [Strongly Agree] Agree Disagree Strongly Disagree

By circling the “Strongly Agree” response, you show that you enjoy being at University very much.

However, if you were to circle the “Disagree” response this would mean you don’t particularly enjoy being at University.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I feel that I am a person of worth, at least on an equal plane with others.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>2. I feel that I have a number of good qualities.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>3. All in all, I am inclined to feel that I am a failure.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>4. I am able to do things as well as most other people.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>5. I feel I do not have much to be proud of.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>6. I take a positive attitude toward myself.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>7. On the whole, I am satisfied with myself.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>8. I wish I could have more respect for myself.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>9. I certainly feel useless at times.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>10. At times I think I am no good at all.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
</tbody>
</table>
### Appendix C: Questionnaire Section 3

**Section 3**

**Instructions:** Please take a moment to imagine you have done poorly on a test at University or attained a poor grade on an assignment.

Please respond to the questions below based on the following prime:

"When I do poorly on an important test or assignment at University, typically..."

**Example**

<table>
<thead>
<tr>
<th>Extremely uncharacteristic of me</th>
<th>Extremely characteristic of me</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10</td>
</tr>
</tbody>
</table>

I get very upset and want to drop out of University

By circling the number 3 response you are showing that it is very uncharacteristic of you to, when you do poorly on an important test or assignment at University, typically get very upset and want to drop out of University.

If you were to choose number 9, you would show that it is very, very characteristic of you to, when you do poorly on an important test or assignment at University, typically get very upset and want to drop out of University.

<table>
<thead>
<tr>
<th>Extremely uncharacteristic of me</th>
<th>Extremely characteristic of me</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10</td>
</tr>
</tbody>
</table>

1. I think about how I might best handle the problem
2. I do what has to be done one step at a time
3. I feel competent
4. I buy a study guide
5. I try to get emotional support from friends and family
6. I act as though it hasn’t happened
7. I let my feelings out
8. I skip class
9. I make a plan of action
10. I think about the reasons why the action might have occurred
11. I feel confident
12. I use my study guide
13. I discuss my feelings with someone
14. I refuse to believe that it happened
15. I feel a lot of emotional distress and I find myself expressing those feelings
16. I reduce the amount of effort I put in to solving the problem
17. I try to come up with a strategy about what to do
18. I concentrate my efforts on doing something about it
19. I feel hopeful
20. I try a different study technique
21. I talk to someone about how I feel
22. I say to myself ‘this isn’t real’
23. I get upset and let my emotions out
24. I drop out of the class I’m doing poorly in
25. I think hard about what steps to take
26. I take additional action to try to get rid of the problem
27. I feel motivated
28. I pretend that it hasn’t really happened
29. I get really upset and am really aware of it
30. I give up trying to reach my goal
Appendix D: Questionnaire Section 4

Section 4

Instructions: Please read each statement carefully and indicate how you feel about each statement by circling a number:

Circle the “1” if you **Very Strongly Disagree**
Circle the “2” if you **Strongly Disagree**
Circle the “3” if you **Mildly Disagree**
Circle the “4” if you are **Neutral**
Circle the “5” if you **Mildly Agree**
Circle the “6” if you **Strongly Agree**
Circle the “7” if you **Very Strongly Agree**

Example

I like to exercise! 1 2 3 4 5 6 7

By circling number “2” you are indicating that you strongly disagree to liking exercise (i.e. you do not like exercising much at all).

If you were to circle number “7” then you would show that you enjoy exercise a lot.

**Statement**

1. There is a special person who is around when I am in need. 1 2 3 4 5 6 7
2. There is a special person with whom I can share my joys and sorrows. 1 2 3 4 5 6 7
3. My family really tries to help me. 1 2 3 4 5 6 7
4. I get the emotional help and support I need from my family. 1 2 3 4 5 6 7
5. I have a special person who is a real source of comfort to me. 1 2 3 4 5 6 7
6. My friends really try to help me. 1 2 3 4 5 6 7
7. I can count on my friends when things go wrong. 1 2 3 4 5 6 7
8. I can talk about my problems with my family. 1 2 3 4 5 6 7
9. I have friends with whom I can share my joys and sorrows. 1 2 3 4 5 6 7
10. There is a special person in my life who cares about my feelings. 1 2 3 4 5 6 7
11. My family is willing to help me make decisions. 1 2 3 4 5 6 7
12. I can talk about my problems with my friends. 1 2 3 4 5 6 7
Appendix E: Information Letter

Dear student,

My name is Sarah Barbas and I am a Psychology Honours student at Edith Cowan University. As part of my degree, I am required to undertake a research project. The Faculty of Computing, Health and Science Human Research Ethics Committee has approved this research.

I am interested in the factors which contributed to your success at University now that you are in the second year of your studies.

I am requesting your participation in this research. You will be required to complete a questionnaire that should take approximately 10 minutes of your time. There are no right or wrong answers. No identifying information will be requested or collected at any time, and all information will be kept confidential. All questionnaires will be numerically coded. The answers you provide will be kept for analysis for a final thesis; however individual responses will not be identifiable. Participation is completely voluntary and you may withdraw from the study at any time without prejudice, and will in no way impact on your coursework or assessments.

If you would like to participate in this research, please complete the questionnaire attached to this letter. Once completed please place it in the envelope provided. If you would not like to participate in this research, please place all the materials in the envelope provided. Your envelopes will be collected by the researcher.

If you have any questions concerning this research or about your participation in the research please contact me, Sarah Barbas, on 0439936277 or s.barbas@ecu.edu.au, or my supervisor Associate Professor Lynne Cohen, l.cohen@ecu.edu.au or on 6304 5575. If you would like to speak to someone who is independent of this study please contact Dr Justine Dandy, the 4th year psychology co-ordinator, on 6304 5745 or j.dandy@ecu.edu.au.

In the unlikely event that completing this survey makes you feel uncomfortable in any way you may contact any of the counselling services listed below:

- Crisis Care: 9233 1199
- Lifeline: 13 11 14
- Mental Health Direct: 1800 220 400

Sarah Barbas
Appendix F: Normal Probability Plot of Standardised Residuals

Normal P-P Plot of Regression Standardized Residual

Dependent Variable: Resilience
Appendix G: Scatterplot of Standardised Residuals and Standardised Predicted Values

Scatterplot

Dependent Variable: Resilience

[Image of a scatterplot showing the relationship between regression standardized predicted values and standardized residuals.]
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Illustrations (photographs, drawings, diagrams, and charts) are to be numbered in one consecutive series of Arabic numerals. The captions for illustrations should be typed on a separate sheet of paper. All illustrations must be complete and final, i.e., camera-ready. Photographs should be large, glossy prints, showing high contrast. Drawings should be high-quality laser prints or should be prepared with india ink. Either the original drawings or high-quality photographic prints are acceptable. Artwork for each figure should be provided on a separate sheet of paper. Identify figures on the back with authors name and number of the illustration. Electronic artwork submitted on disk should be in TIFF or EPS format (1200 dpi for line and 300 dpi for half-tones and gray-scale art). Color art should be in the CMYK color space. Artwork should be on a separate disk from the text, and hard copy must accompany the disk.
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